

1. STAFUSHINSKIY, A. G.
2. USSR (600)
4. Machine-Tool Industry
7. Lowering the auxiliary time factor. Stan. 1 instr. 24, No. 2, 1953.

9. Monthly List of Russian Accessions. Library of Congress, May 1953. Unclassified.

1. STEINBERG, I.
2. USSR (USSR)
4. Hot-Water Supply
7. Solar water heater, MTS 13 no. 5, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

PHASE I BOOK EXPLOITATION

POL/4224

MaZa energetyka; biuletyn, Nr 2 (Low-Capacity Power Engineering; Bulletin, No. 2).
Kraków, Towarzystwo naukowe dla wykorzystania źródeł energetycznych w Polsce,
1958. 131 p. 3,000 copies printed.

No editors mentioned.

PURPOSE: This bulletin is intended for power engineers and technicians specializing in the development of low-capacity natural resources and for users of such power resources for local agricultural and industrial applications.

COVERAGE: This collection of articles is devoted to the problems of the utilizations for local consumption of regional power resources other than coal and oil. Such energy resources include water, wind, sun, tides, natural and waste gases, peat, shale, hot springs and others less known or as yet unexplored. The study of such resources and of their use is presented in a series of articles concerning achievements and experience in Poland and other countries. There is a detailed bibliography, largely of non-Soviet and non-Polish source material, at the end of the book. No personalities are mentioned.

Card 1/6

Low-Capacity Power Engineering (Cont.)

POL/4224

available power supply is not accessible, a small local electric generating unit is desired. She then presents a short account of the state of electrification and, in particular, of low-capacity power developments in Belgium, Denmark, Great Britain, Holland, Sweden, Switzerland, the German Federal Republic, the German Democratic Republic, Austria, Finland, France (Continental and Algiers), Greece, Turkey, Yugoslavia, Italy, the USA, Czechoslovakia, Hungary, Rumania, Bulgaria, Albania and the USSR.

Stolbushkin, M.A. Engineer (translated by Jerzy Kubiowski, Engineer).
Air Compressor Installation VKU-3.5

41

The author describes an experimental air compressor installation VKU-3.5 designed by V.V. Savotin and built by the Special Bureau "Stroyvodpnevmatika" of the Ministry of Railroads, USSR. The VKU-3.5 installation was successfully tested in 1952 at the North Caucasus Experimental Machine Station under summer and winter operating conditions. This installation is intended for pumping water from mountain wells. It is equipped with a wind wheel 3.5 m in diameter which drives the compressor. The author gives

Card 3/6

Low-Capacity Power Engineering (Cont.)

POL/4224

solves local problems of electrification, water supply, irrigation, etc.

Hamusz, Tadeusz. Master of Engineering, Kraków. Calculation and Design of Wind Motors

60

The author gives detailed illustrated instructions to non-specialists who intend to design wind motors for their own use.

Kubiatowski, Jerzy, Engineer. Soviet State Standard For Wind Motors
This is an illustrated translation of GOST 2656-55

85

Drozdowski, H., Professor. Where and How to Install a Wind-Motor
(on the basis of the book by A.V. Karmishyn)

93

The article deals with the methods of finding wind velocity and gives a scale of velocities.

Card 5/6

KSYNKIN, G.K., inzh.; STOLBUSHKIN, N.A., inzh.

Comparative tests for DT-54M and DT-56 tractors. Mekh. 1
elek.sotn.sel'khoz. 17 no.3:20-22 '59. (MIRA 12:8)

1. Severo-Kavkazskaya mashinopyspytatel'naya stantsiya.
(Tractors---Testing)

STOLBUSHKIN, N.A.

Provide agriculture with high-capacity machinery. Trakt. i sel'khoz mash. 33 no.8:4-5 Ag '63. (MIRA 16:11)

1. Vsesoyuznoye ob'yedineniye Soveta Ministrov SSSR po prodazhe sel'skokhozyaystvennoy tekhniki, zapasnykh chastei, mineral'no-tekhnicheskikh sredstv, organizatsii remonta i ispol'zovaniya mashin v kol'khozakh i sovkhozakh.

HENNER, K., akademik; KUNC, Ed., doc.Dr.; LESNY, Ivan, Dr.; STOLC, J.,
primar Dr.; VOJTA, Vaclav, Dr.

Pathogenesis and clinical aspects of arachnoiditis in children.

Cas. lek. Cesk. 95 no. 9:236-239 2 Mar 56

(ARACHNOID, diseases,
arachnoiditis in child. (Cs)

STOLC, J.

After the Trade-Union Congress, p. 193.
(Hutnicke Listy, Vol. 12, no. 3, March 1957. Brno, Czechoslovakia)

SO: Monthly List of East European Accessions. (EEAL) LC. Vol. 6, No. 6,
June 1957. Uncl.

VAJBY, K., ŠIMAL, S.

The reactivity of the blood circulation of the dog under different experimental situations. Bratisl. lek. listy 45 no.5: 283-286. 15 Mr 1965

1. Farmakologický ústav Československé akademie věd v Bratislavě (slovenské pracovisko) (vedoucí MUDr. Fr. V. Seledný, CSc.) a Fyziologický ústav Lékařské fakulty Univerzity Komenského v Bratislavě (vedoucí akademik J. Antal, DrSc.).

Hormione. R. Swann and V. Brock. *Chem. Listy* 34, 479-81 (1932).—The characteristic ppts. of hormione with 37 identified reagents and color reactions with 15 reagents are described. Discrepancies in the literature are noted: Phosphotungstic acid gives a bluish white ppt. with hormione and not a red brown one; sulfosalicylic acid gives a bluish white ppt. with hormione to form an azure-blue soln.; Erdmann's reagent forms a green color, and after standing the soln. becomes red. Reinecke's salt and barbitic acid are the most sensitive reagents for hormione and give ppts. in the formal concn of 1:60,000. For gravimetric determination the sulfotungstic acid and Reinecke's salt gave the most adaptable ppts. Hormione was also dried volumetrically by dissolving the free base in an Et₂O-CHCl₃ mixt., shaking with 0.01 N H₂SO₄, and titrating with 0.01 N base in an Et₂O-CHCl₃ mixt.

NaOH with iodocoumarin in Et₂O as an indicator. The dist. of harmonic from organic
best carried out by the Florence method. 98.5% of the harmonic is recovered consistently
The Siaz-Otto method is much longer, undesirable volatiles are lost, and the re
covery fluctuates from 97.7 to 101%.
FRANK MARSH

FLANK MARCH

EXCERPTA MEDICA Sec 2 Vol 12/8 Physiology Aug 59

3311. NEW TECHNIQUES OF DETECTING IODIZED AMINO-ACIDS ON CHROMATOGRAMS - Nové spôsoby detekcie jódovaných aminokyselín na chromatograme - Štolc V. Endokrinol. Úst. Slovenskej Akad. Vied. Bratislava - BRATISL. LEK. LISTY 1958, 38(II)/8 (324-327) Tables 1

The use of 14 new reagents for the detection of iodized compounds on chromatographic paper is described. The spots contrast well and are stable. The sensitivity of some reagents is such as to suffice for the detection of as little as 0.01 µg. of thyroxine. In this way it is possible to detect the hormones of the thyroid gland and their metabolites after chromatographic partition, even in physiological concentrations.

Stolo, V.

Activity and metabolism of hormones in the pituitary body. p. 543.

VIROLOGIA, Bratislava, Czechoslovakia, Vol. 14, no. 7, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 10, Oct, 1959
Incl.

STOLC, V.

Nature and determination of radioiodine in the blood. Cas.lek.
cesk. 99 no.43:Lek Veda Zahr 226-231 21 0 '60.

1. Endokrinologicky ustav SAV v Bratislave, riaditel dr. J.Podoba.
(IODINE radioactive).

SHNOLTS, V. [Stolc, V.] (Bratislava)

Comparison of different methods of determining iodine in
biological material. Probl.endok. i gorm. no.2:56-62'63.

(MIRA 16:7)

1. Endokrinologicheskiy Institut Slovatskoy akademii nauk (di-
rektor - kandidat meditsinskikh nauk Yu.Podoba)
(IODINE--ANALYSIS)

STOLC, V.

Partial inhibition of the first phases of biogenesis of thyroid hormones. *Physiol. bohemoslov.* 12 no.2:93-99 '63.

1. CSAV, Institute of Endocrinology, Slovak Academy of Sciences, Bratislava.

(THYROID HORMONES)	(METABOLISM)	(THYROGLOBULIN)
(IODINE ISOTOPES)	(IODIDES)	(THIOURACIL)
	(METHYLTHIOURACIL)	(THIOCYANATES)

STOLC, V.; LANGER, P.

Biosynthesis of thyroid hormone following cabbage feeding
in guinea pigs. *Physiol. bohemoslov.* 12 no.3:251-257 '63.

1. Institute of Endocrinology, Slovak Academy of Sciences,
Bratislava.

(PLANTS, EDIBLE)	(THYROID HORMONES)	
(METABOLISM)	(IODINE ISOTOPES)	(IODINE)
(STATISTICS)	(TYROSINE)	(DIIODOTYROSINE)

CZECHOSLOVAKIA

V. MICH, Endocrinology Institute of the Slovak Academy of Sciences,
Czechoslovak Academy of Sciences (Endokrinologický ústav SAV, ÚAV,
Bratislava.

"Kinetics of Snail (*Helix pomatia*) α -Glucuronidase Hydrolysis."

Prague, Czechoslovak Farmacie, Vol 12, No 4, May 63; pp 198-200.

Abstract [English summary modified]: α -Glucuronidase obtained from the
stomach of the common snail (*H. pomatia*) hydrolyzed phenolphthalein
glucuronide linearly: 0.0033, 0.0072 and 0.0106 mol decomposed in a
minute at 37, 51 and 65° C respectively. Above 65°, enzyme was rapidly
inactivated. Table, 2 graphs; 2 Czech and 3 Western references.

GENERAL SUMMARY

V. SVETL, Endocrinology Institute of the Slovak Academy of Sciences
(endokrinologicky ustav SAV), Bratislava.

"Effect of Methimazole on Biosynthesis of Thyroid Gland Hormones."

Prague, Czechoslovakian Patience, Vol 12, No 5, June 63; p. 249-251.

Abstract [English Summary in Title]: Methimazole 25 mg. daily for 10 days previously, 3 days after end, 3 and I^{131} ; paper chromatographic analysis of I^{131} and I^{127} in thyroids: studies with the radioactive I indicated decreased biosynthesis of diiodothyronine, thyroxine and triiodothyronine while I^{127} studies indicated accelerated biosynthesis of thyroxine and triiodothyronine, as well as of substance P. Latter increased also in guinea pigs fed strumigenic diet. Two tables, 2 graphs; 4 Western and 3 Czech (1 unpub.) references.

1/1

[illegible]

depression of normal iodine by the thyroid, the amount of iodine in the organism and other parameters of iodine metabolism in rats after high-fat amounts of fat and iodine. *Physiol. Bohemoslov.* 13 no. 1141-140 '64.

Institute of Endocrinology of the Slovak Academy of Sciences,
Slovak Academy of Sciences, Bratislava.

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KNOPP, J.; STOLC, V.

Autoiodoproteolysis of ^{127}I -thyroglobulin in vitro. *Physiol. Bohemoslov.* 14 no.2:186-190 '65.

1. Institute of Endocrinology, Slovak Academy of Sciences,
Bratislava.

KOPPEL, J.; JAVIL, V.; NIFTH, D.

Experiences with the stability of protein-bound and total iodine
in the serum. Bratisl. lek. listy 45 no.2:113-115 31 01 '55.

1. Endokrinologický ústav Slovenskej akadémie vied v Bratislave
(riaditeľ MUDr. J. Podoba, CSc.).

CZECHOSLOVAKIA

KNOPP, J., STOLC, V; Endocrinological Institute, Slovak Academy of Sciences (Endokrinologický Ústav SAV), Bratislava.

"Influence of TSH in Vivo on Autoiodoproteolysis of I127 Thyroglobulin in Vitro."

Prague, Czechoslovakian Physiologic, Vol 15, No 2, Feb 66, pp 103-104

Abstract: Thyrotrophic hormone Ambinon H.V. Organon was administered to male rats chronically or only once. Simultaneously an I131 containing compound was also administered. The one-dose administration resulted in an increased level of I in the serum. Chronic administration caused I131 accumulation by the thyroid, a decreased I127 concentration in the thyroid, increased serum I level, reduced I127 thyroglobulin proteolysis and an increase in the weight of the thyroid. 1 Western, 1 Czech reference. Submitted at "16 Days of Physiology" at Kosice, 28 Sep 65.

1/1

STOLCESCU

CZECHOSLOVAKIA

STOLC, V., ~~KNOPP, I.~~ STOLCOVA, E; Endocrinological Institute
Slovak Academy of Sciences, (Endokrinologicky ustav SAV),
Bratislava.

"Intake of Iodine, Food, Water and Milk by a Rat and its Young
During Lactation."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, pp 11-15

Abstract: 15 rat families were studied for 40 days following
the birth. Lactation lasted 30 days. Iodine balance in the
rat mother is discussed. The young rats got the maximum amount
of iodine on the 16th day. The mother rat takes the maximum
amount of food and water between the 14th to 16th days of
lactation. 1 Figure, 2 Western, 5 Czech references. Submitted
at "16 Days of Physiology" at Kosice, 27 Sep 65.

1/1

GAZAREK, Frantisek; KRIKAL, Zdenek; STOLCOVA, Eliška

Role of the midwife in the preparation of expectant mother for labor. Cesk. gyn. 27[41] no.5:363-366 Je '62.

1. Por.-gyn. odd. OUNZ Sumperk, prednosta dr. Fr.Gazarek.
(LABOR) (MIDWIVES)

KAPPELLER, K.; CIAMPOR, F.; STOLCOVA, M.; UHARCEKOVA, M.; BAUER, V.

Lumbar splanchnic nerves in the dog. Cesk. morf. 13 no.3:220-227
'65.

1. Institute of Anatomy, Medical Faculty of Komensky University,
Bratislava, Czechoslovakia.

STOLCOVA, Olga. MUDr.

Principal problems of health services in school in Czechoslovakia.
Cesk. zdravot. 4 no.7:347-364 July 56.

1. Vedouci odboru pece o zenu a dite, ministerstvo zdravotnictvi.
(SC:DOIS,
med. serv. in Czech. (Cz))

LP 21

The use of potentiometric titrations in sugar technology.
Z. Štuková and J. Borsáček. *Časopis pro chemii* 60, 411
(1949).—For titrating acids with bases the authors recom-
mend the use of Ni-Pt electrodes with a potentiometric
titration. For titrating oxalic acid or ferrous salts with
KMnO₄ they found a Pt-Pt wire combination satisfactory.
One of the wires protected by a colloidal film according to the
method of Jenuševský (*Chem. Zvesti* 42, 171 (1948)). Pt
plates buffered by a film were not adequate for the film
ruptured about the ridges and leaked. Frank Maresh

Application of sugar beet molasses. / *Industrie und Handel*
(N.Y., N.Y. City Edition, 1900, *pp.* 97, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908,

STOLCOVA, Z.

(2)

Boat pectin. Z. Stolková and M. Friml (*Ustý Čadca*, 1953, 80, 163-165; *Sng. Ind. Jbsh.*, 1953, 15, 118).-- Effects of temp., time of heating, and concn. of acid on the yields, degree of esterification, acetylation, and gelling power of the product are examined in the course of prep. of gel forming pectins and their concentrates by acid hydrolysis of beet-pulp, followed by pptn. by gradually adding dil. (1 : 1) technical aq. NH_3 to give pH 4.5. Different methods of purification (e.g., washing with EtOH, or adding citric acid, concentrating, and pptn. with EtOH) are compared.

P. S. Abur.

ZAHORAK, Emil, MUDr., obvodni lekar, Napajedla; STOLCPART, Jan, MUDr., zavodni lekar, Napajedla

Work in a combined factory & territorial health community center.
Cesk. zdravot. 7 no.5:262-265 June 59.

1. KUNZ Ottwaldov, reditel dr. Vladimír Bucek
(INDUSTRIAL HYGIENE
in Czech. factory (Cs))
(PUBLIC HEALTH
in Czech. (Cs))

STOLER, D.D., inzhener.

Turning-on hot water heaters for warm air curtains. Prom.energ. 10 no.5:
21 My '53. (MLRA 6:5)

(Factories--Heating and ventilation)

STOLMR, D.D.(Sverdlovsk)

Selecting the type of air curtains. Vod.i san.tekh. no.3:29-32
Mr '60. (MIRA 13:6)

(Air curtains)

STOLER, D.D., inzh. (Sverdlovsk)

Making calculations for the aeration of hot mills. Vod.1 san.
tekh. no.3123-25 Mr '62. (MIRA 15:8)
(Factories--Heating and ventilation)

STOLER, D.D., inzh.

Use of infrared gas radiators for heating industrial shops.
Prom. energ. 18 no.10:15-19 0 '63. (MIRA 16:10)

SOV/23-58-3-5/11

AUTHORS: Fayngol'd, S.I., Candidate of Technical Sciences; Stoler, I. G.,
Shurak, R.D.

TITLE: On the Consumption of Zinc Chloride at the Catalytic Treatment of Oil Shale Tar ((O Raskhode khloristogo tsinka pri kataliticheskoy pererabotke slantsevoy smoly)

PERIODICAL: Izvestiya Akademii nauk Estonskoy SSR, 1958, Nr 3, pp 208 - 219 (USSR) (Seriya tekhnicheskikh i fiziko-matematicheskikh nauk)

ABSTRACT: The article deals with test results on the influence of the quantity of zinc chloride used as the basic catalyst in the catalytic treatment of oil shale tar by the method of the Chemical Institute of the AS Estonian SSR. Since 10% of zinc chloride was used in the raw material in former tests, the possibility of diminishing this amount is considered. The raw material consisted of a mixture of industrial tar fractions from tunnel-oven light oil and oven benzine. The raw material was heated, together with the catalyst, at 100° C up to a drop of the bromine number to 60 - 62, followed by a separation of the formed complex from the catalysate and a distillation of the catalysate into benzine, a fraction of Diesel fuel, a fraction of sewing oil and a residue of vacuum distillation. An increase of the concentration of zinc

Card 1/3

SOV-23-58-3-5/11

On the Consumption of Zinc Chloride at the Catalytic Treatment of Oil
Shale Tar

chloride resulted in a shortening of the process, and in an improvement in the quality of the refined products. An increase of the catalyst concentration to 15 to 20% permits the catalyst to be used four times, resulting in a 3.75 to 4% decrease in the total consumption of the catalyst. The most economical way of carrying out the process of zinc-chloride refining, is the use of a 10 to 15% catalyst, and its repeated use with an addition of 2% of fresh catalyst before every subsequent cycle. The quality of the obtained products is satisfactory. The consumption of the zinc chloride, before its regeneration, is reduced by up to 3%. The exhausted catalyst is extracted in the form of an aqueous solution of zinc chloride amounting to 55% of the original

Card 2/3

SOV/23-58-3-5/11

On the Consumption of Zinc Chloride at the Catalytic Treatment of Oil Shale Tar

amount. The total consumption of zinc chloride amounts to 1 to 1.5% of the raw material. There are 13 tables and 6 Soviet references.

ASSOCIATION: Institut khimii AN Estonskoy SSR (The Chemistry Institute of the AS Estonian SSR). Proyeektnyy i nauchno-issledovatel'skiy institut Ministerstva mestnoy i slantse_khimicheskoy promyshlennosti Estonskoy SSR (The Planning and Scientific Research Institute of the Ministry of the Local Oil-Shale Chemical Industry of the Estonian SSR)

SUBMITTED: August 3, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the translation

1. Tars--Catalysis
2. Zinc chloride--Catalytic properties
3. Petroleum--Production
4. Zinc chloride--Consumption

Card 3/3

I. GUL87-67 ETP(m)/E-T(1)

ACC NR: AR6016462 (N)

SOURCE CODE: UR/0124/65/000/012/B067/BC67

AUTHOR: Butakov, S. Ye.; Stoler, V. Z.

TITLE: Momentum of a circular turbulent jet in an efferent flow

SOURCE: Ref. zh. Mekhanika, Abs. 12B479

REF SOURCE: San. tekhn. Otopleniye i ventilyatsiya, vyp. 1, 1965, 88-92

TOPIC TAGS: turbulent jet, motion mechanics

ABSTRACT: The authors give data from an experimental determination of the momentum of a circular jet perpendicular to an efferent flow. The momentum was determined on a special installation by weighing the reaction force. Relationships are derived for the relative reaction of a screen (the ratio of screen reaction for a jet in an efferent flow to that for a submerged jet) as a function of the angle of inclination and relative velocity of the jet (the ratio between the velocities of the jet and efferent flow). A. S. Ginevskiy. [Translation of abstract]

SUB CODE: 20

Card 1/1

SCHANZEL, Hubert; STOLERIK, Lubomir (deceased)

Effect of the liver fluke on specificity of the intradermal tuberculin test in cattle. Veterinarni medicina 7 no.1:39-42 '62.

1. Katedra pro parazitologii a invazni choroby, Veterinarni fakulta Vysoke školy zemědělské, Brno; Veterinarní zdravotní služba jatek Jihlavského průmyslu masného, Krahulec u Telce.

STOLERMAN, S.S.

Miners of Vorkuta are trying hard to implement the seven-
year plan. Ugol' 40 no.8:16-18 Ag '65. (MIRA 18:8)

1. Glavnyy inzh. kombinata Vorkutugol'.

SCARE, D., ing.; STOIERU, B., ing.

Grounding at zero in low-tension networks. Energetica Rum 8
no.4:153-158 Ap '60.

STOLERU, B., ing.; TENEA, O., ing.

Utilization of rigid bars in external stations of 35 kv. Energetica
Rum 9 no.6:245-247 Je '61.

STOLERU, B.

A metallic substation transformer. Energetica Run 9 no.5:
214-216 My '61.

VOINEA, Dimu, ing; STOLERU, Boris, ing.

Aspects of some typification problems in Rumania. Energetica
Rum 10 no.7:265-275 JI '62.

1. Inginer specialist la Institutul de studii si proiectari energetice (for Voinea).
2. Seful atelierului de tipizare din Institutul de studii si proiectari energetice (for Stoleru).

ACCESSION NR: AF5014865

UR/0133/65/000/006/0349/0350
621.774.35: 621.893

AUTHOR: Grebenshchikova, A. Z.; Lyadova, A. A.; Kaufman, M. M.; Gleyberg, A. Z.;
Nodov, E. O.; Kukarskikh, V. N.; Stoletny, M. F.; Stern, V. A.

TITLE: Lubricant for tube rolling in a continuous mill

SOURCE: Stal', no. 6, 1965, 549-550

TOPIC TAGS: graphite lubricant, continuous tube mill, smokeless lubricant,
antifriction, nine high mill, inorganic compound, seamless tubing, hot deformation

ABSTRACT: Lubricants consisting of graphite and different petroleum products are widely used in the production of seamless tubing by hot-deformation methods, particularly in the continuous rolling mills with long mandrels as well as in power presses. Although these lubricants are relatively uninvestigated, it is known that graphite at high temperatures (900-1200°C) loses its antifriction properties. Besides, the combustion of the petroleum products in the lubricants contaminates the atmosphere and equipment in the shop. There also exists the vitreous type of lubricants, used only for the pressing of tubes from high-alloy steels, and equally difficult and expensive to fabricate. The techniques of applying the lubricant are of major importance, and their mechanization is

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ACCESSION NR: AP5014863

advisable, particularly in the modern automatic continuous tube rolling. Further, the author describes tests of nine selected lubricants, including those recently developed on the basis of inorganic compounds -- salts of chloride and phosphata.

(Phosphorus - and chlorine - containing lubricants form phosphides and chlorides on the contact surfaces and the resulting boundary film prevents the interlocking of metals, reducing the friction coefficient.) The effectiveness of the selected lubricants was tested while rolling tubes in the 18 m long mandrel of a continuous nine-high mill with nine individual power drives, the lubricants being evaluated and compared according to the load on the motors of the principal stands of the mill (6th to 8th) and the sliding rate of tube from the mandrel. Compared with the graphite fuel oil lubricant 9 and the other seven lubricants tested, lubricant 7 proved to be the most effective. The exact composition of this lubricant is not described, but the author states that it was developed on the basis of "inorganic compounds" and has a density of 1.65 g/cu cm, bulk weight of 0.98 ton/cu m, melting point of 850-900°C, and solubility of 64% in water. This smokeless lubricant displays the best antifriction properties and ensures a normal rolling process. Its components do not consist of scarce materials and therefore

Cord 2/3

L-53982-55

ACCESSION NR: AF5014863

it is considerably (about six times) less expensive than graphite-fuel oil lubricants. Orig. art. has: 1 figure, 1 table.

ASSOCIATION: none

SUBMITTED: 000

ENCL: 00

SUB CODE: 77,
NN

NO REF SOV: 001

OTHER: 001

Card 3/3

STOLETNIY, M.F.; GLEYBERG, A.Z.

Correlation between the length of the mandrel and the pipe in
rolling on a continuous mill. Trudy LPI no.243:186-190 '65.
(MIRA 18:6)

STOLETNIY, M.F.

Calculating the kinematics of a reduction mills with a differential group drive. Trudy LPI no.243:178-185 '65.

(MIRA 18:6)

MATVYEV, Yu.M., doktor tekhn. nauk, VILKIN, V.N., doktor tekhn. nauk;
PINKEL'SHTEYN, Ya.S., kand. tekhn. nauk; KAUFMAN, M.M., kand.
tekhn. nauk; GLEYBERG, A.Z., kand. tekhn. nauk; NOVIKOV, A.G.,
inzh.; SITNIKOV, L.L., inzh.; NOBEV, E.O., inzh.; STOLETNIY,
M.F., inzh.; STERN, V.A., inzh.; FRIDMAN, P.S., inzh.

Operating conditions and wear of mandrels on the continuous
billet mill of a 30-102 pipe rolling unit. Stal' 25 no.10.
930-934 0 '65. (MIRA 18:11)

KACHANKO, I.Y., uchitel'; STOLETENKO, H.G. (Khabarovsk); SYROVATKO, A.D.,
uchitel'; GAPONENKO, I.M. (Novozybkov); SYROYEZHNIKIN, I.T., uchitel'

Letters to the editor. Khim. v shkole 16 no. 3:87-89 My-Je '61.
(MIRA 14:5)

1. Zheleznno-dorozhnaya shkola No.35, st. Zdolbunovo (for Kachanko).
2. Shkola rabochey molodezhi No.2, g. Dnepropetrovsk (for Syrovatko).
3. Srednyaya shkola No.13, Kuybyshev (for Syroyezhkin).
(Chemistry--Study and teaching)

BERDICHEVSKAYA, Nina Aleksandrovna; ZAVALISHINA, Natal'ya Grigor'yevna;
STOLETNIYAYA, Anna Markisovna; OEL'FENBERG, L.L., otv.red.;
TROFIMENKO, A.S., tekhn.red.

[A textbook of ore dressing] Khrestomatiis po obogashcheniu poleznykh
iskopaemykh. Khar'kov, Izd-vo Khar'kovskogo gos.univ., 1959. 102 p.
(MIRA 14:1)

(Readers and speakers--Ore dressing)

DITMAN, Irina Alekseyevna; MEDVEDER, Lyudmila Dmitriyevna; STOLETNYAYA, Anna Markianovna; GEL'PENBYN, L.L., otv.red.; TROFIMENKO, I.S., tekhn.red.

[Mining; a reader] Mining. Khrestomatia po gornomu delu. Khar'kov, Izd-vo Khar'kovskogo ordena Trudovogo krasnogo znameni gos.univ. imeni A.M.Gor'kogo, 1959. 120 p. (Text in English with vocabulary). (MIRA 12:12)

(Mining engineering)

DITMAN, Irina Alekseyevna; VOLOSCHENKO, Diana Kuz'minichna; MEDVIDEN,
Lyudmila Dmitriyevna; STOLETHIAYA, Anna Marklanovna;
TERPIGOREVA, V.D., retsenzent; BELOCHKIN, A.G., otv. red.;
PARTSEVSKIY, V.N., red.izd-va; NURMUKHAMEDOVA, V.F., red.
izd-va; PROZOROVSKAYA, V.L., tekhn. red.

Ore mining. Moskva, Gosgortekhnizdat, 1963. 162 p. [Text in
English with vocabulary] (MIRA 17:2)

PHASE I BOOK EXPLOITATION

844

Stoletov, Aleksandr Grigor'yevich

Sobraniye sochineniy. t.3: Vvedeniye v akustiku i optiku. Teoriya teploty.
(Collected Works. v. 3: Introduction to Acoustics and Optics. Heat Theory)
Moscow, Gostekhizdat, 1947. 623 p. 4,000 copies printed.

Ed. (title page): Timiryazev, A.K., Prof.; Ed. (inside book): Kol'chenko, G.N.;
Tech. Ed.: Akhlanov, S.N.

PURPOSE: This book, the third and final volume of Stoletov's collected works, is intended for teachers and lecturers on the high school and college levels.

COVERAGE: The book contains a course of lectures delivered by the author in 1881 - 1882 at the University of Moscow. The volume consists of two parts, the first of which "Introduction to Acoustics and Optics", was published in 1895. The second part, "Heat Theory" was not previously published, and was available only in the form of lithographic notes distributed among the author's students, one of whom, D.A. Col'dgamer, an outstanding physicist himself, and lecturer in physics at the University of Kazan', assembled and edited this part of the book. In his foreword, the original author states his book presents in a concise and

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CONFIDENTIAL

The polarization of ^{56}Fe protons (11/76)

Hadron-synthesis in High Energy Accelerators and Ion
Physics

Geneva, 11-20 June 77
L. Braken (1)

CARD 1 / 2 PA - 1614

SUBJECT USSR / PHYSICS
 AUTHOR MEŠČERJAKOV, M.G., MONUŠEV, S.B., SIOLETOV, G.D.
 TITLE The Polarisation of protons with the energy of 660 MeV on the occasion of Nuclear Scattering.
 PERIODICAL Žurn.eksp. i teor.fiz, 31, fasc.3, 361 - 370 (1956)
 Issued : 12 / 1956

The present work investigates such polarization effects of protons with the initial energy of 660 MeV. At first the production of polarized protons is discussed. The first scattering of protons occurred in the 6 m synchocyclotron on a 4 cm beryllium target (polarizer), which protrudes into the circular orbit of the 660 MeV protons.

Measuring method: The secondarily scattered protons were registered by means of telescopes which consisted of two and three scintillation counters connected for coincidence. The measuring order for secondary scattering consisted of a circular phase angle disk of 800 mm diameter in the center of which a scatterer-analyzer was fitted. Experiments consisted essentially in measuring the angle dependence of asymmetry.

Summary of experimental results: At 660 MeV the polarization of protons occurs on the occasion of diffraction scattering and also on the occasion of quasielastic collisions. In both processes the spin has the same direction as in the case of free (p-p) scattering. The values of asymmetry found at an angle of 90° on the occasion of the scattering of polarized protons with >620 MeV on nuclei of Be, V, Al, Pb and Bi were equal to one another within the limits of measuring errors. A comparison of data at present available on the twofold scattering of protons by beryllium gave the following results: a) The maximum value of the polarization of diffractionlike scattered protons does not change noticeably if energy is increased from 300 to 635 MeV,

Žurn.eksp.i teor.fiz, 31, fasc.3, 361 - 370 (1956) Cand 2 / 2 PA - 1514

and amounts to at least 60% at 635 MeV. b) The polarization of protons on the occasion of quasielastic (p-p) scattering increases to about double its value if energy increases from 285 to 635 MeV, and attains values which are only little lower than those of polarization on the occasion of free (p-p) scattering. Apparently the polarization of protons on the occasion of free (p-p) scattering at 300 and at 635 MeV is approximately of equal strength. However, the data obtained by this work are as yet insufficient.

INSTITUTION: Institute for Nuclear Problems of the Academy of Sciences of the USSR.

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CIA-RDP86-00513R001653330007-3

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653330007-3"

AUTHOR
TITLE

MESHCHERYAKOV, M.G., MOROSHEV, S.S., STOLIMOV, I.I.,
polarization in (p-p) - Scattering at 635 MeV.

56-7-6/66

PERIODICAL

(Polarizatsiya v (p-p) - rasseyanii pri 635 MeV - Russian)
Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol 33, Nr 7, pp 37-46 (U.S.S.R.)

ABSTRACT

By means of a single and a multi-step scintillation telescope the angular distribution of the polarized protons in plastic (p-p)-scattering was measured within the angular range of $11.6^\circ \leq \theta \leq 90.3^\circ$ (C.M.S.). The primary proton beam had an energy of 635 MeV and a polarization of 0.58 ± 0.03 . With the help of the optical model of (p-p)-scattering the results of the determination of the differential cross section $\sigma_0(\theta)$ of the elastically scattered but not polarized protons ($E_p = 657$ MeV) was analyzed. In this way it was possible to determine the character of the interference between the amplitudes of Coulomb- and nuclear scattering. The polarization found can be represented approximately by the function: $\sigma_0(\theta)P(\theta) = \sin \theta \cos \theta \times [3.20 P_0(\cos \theta) + 3.13 P_2(\cos \theta) + 1.20 P_4(\cos \theta) - 0.12 P_6(\cos \theta)] \cdot 10^{-27}$ cm²/ster. The presence of the term $\sin \theta \cos \theta P_4(\cos \theta)$ tends to show that in scattering the tripletlike F-state plays a certain part. It was further found that on the occasion of the quasielastic (p-p)-scattering by Be only $\sim 85\%$ of the protons polarized on the occasion of scattering by H are polarized in this case. (2 tabl., 4 ill., 9 Slavic references) United Nuclear Research Institute. (Ob'yedinennyy institut yadernykh issledovaniy)

ASSOCIATION

DATE

16.4.1957

AVAILABLE

Library of Congress.

Card 1/1

24(5)

SOV/56-35-6-12/44

AUTHORS: Kumekin, Yu. P., Meshcheryakov, M. G., Nurushev, S. B.,
Stoletov, G. D.

TITLE: Triple Scattering of Protons at 660 Mev (Troynoye rasseyaniye
protonov pri 660 Mev) I. Measurement of the Depolarization
Parameter $D(90^\circ)$ (I. Izmereniye parametra depolyarizatsii
 $D(90^\circ)$)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol 35, Nr 6, pp 1398-1401 (USSR)

ABSTRACT: This paper deals with the contents of a lecture which was
held at the 4. session of the Scientific Council of the
Ob'yedinennyy institut yadernykh issledovaniy (United Institute
for Nuclear Research). The parameter D was introduced by
Wolfenstein (Vol'fenshteyn) (Ref 1). It holds that
$$\sigma_0(1-D) = \frac{1}{4} |G-N-B|^2 + |H|^2$$
, where σ_0 is the scattering cross
section of the nonpolarized proton beam in hydrogen. The
amplitudes G, N, B, H are functions of the scattering angle
and of energy. In the present paper the results obtained by
D-measurements in pp-scattering below 90° in the center of

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SOV/56-35-6-12/44

Triple Scattering of Protons at 660 Mev. I. Measurement of the Depolarization Parameter $D(90^\circ)$

mass system at 640 Mev are given. Work was carried out on the six-meter synchrocyclotron of the United Institute for Nuclear Research. The first scattering of the 660 Mev protons took place in the external chamber of the synchrocyclotron in the beryllium polarizer target (4 cm thick) and gave a proton beam with $P_1 = 0.58 \pm 0.03$ and $E_p = 640 \pm 12$ Mev ($7 \cdot 10^5$ protons/cm²sec). The second scattering occurred in the hydrogen target (liquid H₂ in a glass container, 12 cm diameter). The mean proton energy in the center of the target was 635 Mev. Whereas in the first scattering the angle was 90° , it was found that $\theta_2 = 41 \pm 2.5^\circ$ (i.e. $90 \pm 5^\circ$ in the center of mass system). The energy after scattering was 315 ± 40 Mev. The third scattering occurred finally in a carbon analyzer target ($\theta_3 = 12^\circ$). The two variants of the experimental arrangement used by the authors are shown by a figure. It is described and discussed, and the size and arrangement of the 9 counters is given.

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It holds that $D(90^\circ) = \varepsilon_{3n}/\varepsilon_3$; the two asymmetry values were

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Triple Scattering of Protons at 660 Mev. I. Measurement of the Depolarization Parameter $D(90^\circ)$

determined as amounting to $\epsilon_{3n} = 0.200 \pm 0.032$ and

$\epsilon_3 = 0.216 \pm 0.012$, respectively, and thus $D(90^\circ) = 0.93 \pm 0.17$.

These results agree well with those obtained by other authors (reference 3: $E_p = 310$ Mev; reference 4: $E_p = 415$ Mev). The

result indicates that pp-scattering at an angle of 90° is mainly due to the $C(\sigma_1 + \sigma_2)n$ term in the scattering matrix.

In Born's approximation this term corresponds to pure spin-orbit coupling (Ref 5). The authors finally thank Ya. A. Smorodinskiy and R. M. Ryndin for discussions. There are 1 figure and 5 references, 1 of which is Soviet.

ASSOCIATION: Ob'yedinennyy Institut yadernykh issledovaniy
(United Institute for Nuclear Research)

SUBMITTED: July 15, 1958

Card 3/3

SOV/56-36-3-3/71

21(1)

AUTHORS:

Zrelov, V. P., Stoletov, G. D.

TITLE:

The Range-Energy Ratio for Protons of 660 Mev (Sootnosheniye probeg - energiya dlya protonov 660 MeV)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 658-668 (USSR)

ABSTRACT:

In the introduction the fact is discussed that, according to the theory of ionization losses, the average ionization potential I of the matter through which the charged particles pass, is assumed to depend only on the atomic properties of matter but not on the velocity of the particles passing through it; actually, however, experimental data show (as shown in table 1) that for elements with $Z > 13$, I has the tendency of increasing with an increase of particle velocity. The present paper contributes towards explaining these conditions by means of an experimental investigation of the range-energy ratio in copper in the case of a proton energy of 660 Mev. The proton beam, which is homogeneous up to ± 4 Mev, was produced by the synchrocyclotron of the OIYaI. Figure 1 shows the experimental arrangement, which is, however, not further described. The method is based upon using the Cherenkov effect.

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The Range-Energy Ratio for Protons of 660 Mev SOV/56-36-3-3/71

Determination of proton velocity was carried out by the exact measurement of the angle of emission of Cherenkov radiation in plexi-glass. Whereas, in the case of a flux of 10^6 protons/cm².sec comparatively thick emitters (2.9 g/cm²) and an exposure of 3 minutes was necessary (Ref 11), it was possible, by increasing intensity to $4 \cdot 10^7$ protons/cm².sec, to reduce exposure to 3 - 5 seconds (Ref 11). (The photographic camera used had a "Jupiter-3" 1:1.5 lens; a "Negativ-A" film with a sensitivity of 50 COST-units was used.) Measurement of refraction indices was carried out by means of the refractometer IRF-23 for $\lambda = 5461 \text{ \AA}$ and amounted to $1.4926 \pm 5 \cdot 10^{-4}$ (absolute). The angle of emission of Cherenkov radiation was determined for this λ as amounting to $\theta = (34^\circ 0.5') \pm 3'$, and proton energy according to formula (4) as 938.2 Mev; for the emitter center 654.9, and, if slowing down was taken into account, 658.4 Mev was measured. The error ΔE is given as amounting to ± 2.1 Mev. Together with proton energy measurement, the total range in copper was measured as amounting to $(257 \pm 1.2) \text{ g/cm}^2$. (Figure 1b shows the experimental arrangement). Results are discussed in detail. From the results obtained by energy- and range measurements

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The Range-Energy Ratio for Protons of 650 Mev 307/56-36-3-3/71

the ionization potential is then calculated in the following according to

$$R = \int_0^E \left(\frac{dE}{dx} \right)^{-1} dE$$

(R = proton range in g/cm², dE/dx = ionization losses in Mev/g; dE/dx is obtained according to the Bethe (Bete) formula (Ref 15)). It is determined as amounting to $I_{Cu} = (305 \pm 10) \text{ ev}$, a value which agrees well with that obtained by Kather and Segre (Mazer, Segre) (Ref 6). The value was calculated on the assumption that the ionization potential is independent of particle velocity. Finally, the authors give results concerning measurements of the relative stopping power for H, Be, C, Fe, Cu, Cd and W for 635 Mev protons (Table 2) and they discriminate results in the last paragraph. They thank Yu. D. Prokoshkin and I. M. Vasilevskiy for discussions and for data concerning the absolute energy losses of 650 Mev protons. There are 4 figures, 2 tables, and 20 references, 5 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute
Card 3/4

83581
S/056/60/038/005/014/050
B006/B070

2A.6900

AUTHORS:

Kumekin, Yu. P., Meshcheryakov, M. G., Nurushev, S. B.,
Stoletov, G. D.

TITLE:

Triple Scattering of 660-Mev Protons. II. The Angular
Dependence of Depolarization

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 5, pp. 1451-1455

TEXT: The authors have shown in an earlier work (Ref. 1) that 640-Mev protons are slightly depolarized when they are scattered through an angle of 90° in the center-of-mass system. This shows that under these conditions the pp-interaction is relatively seldom accompanied by a change in the spin orientation. Further investigations at other scattering angles (54, 72, 108, and 126° in c.m.s.) gave two independent relations between the amplitudes of the pp-scattering matrix, and two relations for the angular dependence of the differential cross sections and the polarization. These investigations are communicated in this paper. The work was done on the six-meter synchrocyclotron of the Ob'yedinennyy institut yadernykh

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Triple Scattering of 660-Mev Protons. II. The Angular Dependence of Depolarization S/056/60/038/005/014/050
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issledovaniy (Joint Institute of Nuclear Research). The experimental arrangement shown in Fig. 1 is the same as that of Ref. 1. The proton beam had an energy of (640 ± 12) Mev and a polarization $P_1 = 0.58 \pm 0.03$. First, the beam was scattered to the left through 90° by a beryllium polarizer target inside the synchrocyclotron chamber, after which it was scattered in a cylindrical vessel filled with hydrogen, again to the left. The average proton energy at the center of the hydrogen target was 635 Mev, the flux was $7 \cdot 10^5$ p/sec.cm² in the beam 3 cm thick. The depolarization parameter was determined from the scattering angle θ_2 (second scattering) every 18° in the range of angles investigated. After passing through a three-counter telescope, the beam fell on a carbon analyzer target from which it was scattered on both sides through $\theta_2 = 12^\circ$ in the laboratory system. The normal component of the polarization vector of the doubly scattered protons was determined from the left-right asymmetry ϵ_{3n} of the protons coming from the C-target. This was done by recording the fivefold coincidences of the counters (cf. Fig.). The depolarization parameter was determined from the relation $D = (\epsilon_{3n}/\epsilon_3)(1 + P_1 P_2) - P_2/P_1$; (P_2 is the

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Triple Scattering of 660-Mev Protons. II. The Angular Dependence of Depolarization S/056/60/038/005/014/050
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polarization after the first scattering; ξ_3 is the left-right asymmetry of a proton beam with P_1 and having an energy equal to that of the doubly scattered beam E_2 , after scattering by the carbon target). The experimentally determined values of θ_2 , E_2 , ξ_3 , ξ_{3n} , and D , together with corrections, are collected in a table. The values obtained for $\theta_2 = 90^\circ$ in Ref. 1 are also given. In all cases D had a positive sign. According to Wolfenstein (Ref. 3), D may vary between $-1+2|P_2| \leq D \leq +1$. The results show that the normal component of polarization is only slightly altered for pp-scattering at 54, 72, and 90° . Referring to Wolfenstein, the authors now show that the sum and difference of the depolarization parameters for scattering angles that are symmetrically situated with respect to 90° , may be interpreted in terms of the amplitude of the pp-scattering matrix. Also, the probability that $[D(54^\circ)-D(126^\circ)]$ and $[D(72^\circ)-D(108^\circ)]$ do not vanish may be calculated (80 and 86%). Ya.A.Smorodinskiy, S. N. Sokolov, N. P. Klepikov, and R. M. Ryndin are thanked for discussions. There are 1 figure, 1 table, and 9 references: 2 Soviet, 6 US, and 1 CERN.

Card 3/3

Joint Inst. Nuclear Research

S/056/62/043/005/017/058
B102/B104

AUTHORS: Kumekin, Yu. P., Meshcheryakov, M. G., Murushev, S. B.,
Stoletov, G. D.

TITLE: Triple scattering of 660-Mev protons. III. Angular
dependence of parameter R

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 5(11), 1962, 1665-1671

TEXT: Further experiments on triple scattering of protons were made
within the scope of the program of reconstructing the pp-scattering matrix
for $E_p = 660$ Mev (cf. I: ZhETF, 35, 1398, 1958; II: ZhETF, 38, 1451,
1960). The change in primary-beam polarization \vec{P}_1 was measured which
depends on the polarization tensors D_{1p} and K_{1q} of the scattered and
recoil protons, respectively:

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Triple scattering of 660-Mev protons ...

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B102/B104

$$P_{1p} = \frac{P_{1p}^{(0)} + D_{1p} P_{1q}}{1 + P_{1p}^{(0)} P_{1q}}, \quad P_{1q} = \frac{P_{1q}^{(0)} + K_{1q} P_{1p}}{1 + P_{1q}^{(0)} P_{1p}}, \quad |D_{1p}| = \begin{pmatrix} n & D_{1p} & 0 & 0 \\ 0 & X & Z \\ K & 0 & -Z & Y \end{pmatrix};$$

$$P_1 s_1 = R P_1 [n, k_1] + A P_1 k_1, \quad R = Z \sin(\theta/2) + Y \cos(\theta/2), \quad A = Z \cos(\theta/2) - Y \sin(\theta/2);$$

$$P_1 k_1 = R P_1 [n, k_1] + A P_1 k_1, \quad R' = -Z \cos(\theta/2) + X \sin(\theta/2), \quad A' = Z \sin(\theta/2) + X \cos(\theta/2).$$

The subscripts p and q refer to the measured polarization components of scattered and recoil protons, $P^{(0)}$ is the polarization arising when an unpolarized beam is scattered, the subscript i refers to the initial polarization of the incident beam. The geometry of the experiment may be seen from Fig. 1. The parameter R is related to the asymmetries by $R = \epsilon_{3s}/(\epsilon_3 \sin \varphi_2)$ where $\epsilon_3 = P_1 P_3$, $\epsilon_{3s} = R P_1 P_3 \sin \varphi_2 = (N_L - N_R)/(N_L + N_R)$;

for $\varphi_2 = 90^\circ$ (which is the case in Fig. 1) these relations are simplest.

The experiments were made with protons of 640.12 Mev and with

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Triple scattering of 660-Mev protons ... S/056/62/043/005/017/058
B102/B104

$P_1 = 0.58 \pm 0.03$ from the six-meter synchrocyclotron of the OIYal. The experimental arrangement of monitor, targets and counter telescopes was such as to satisfy the geometrical demands. The results were used for a phase-shift analysis and for determining the moduli of the scattering matrix M_{pp} . For $\theta = 90^\circ$ and $E_p \approx 640$ Mev:

$$\begin{aligned} |M_{11}| &= (0.24 \pm 0.11) \cdot 10^{-13} \text{ cm}, \\ |M_{12}| &= (0.51 \pm 0.05) \cdot 10^{-13} \text{ cm}, \quad |M_{10}| = (0.40 \pm 0.06) \cdot 10^{-13} \text{ cm} \end{aligned} \quad (13)$$

$\cos \varphi_{01,10} = -0.96 \pm 0.24$ and $\cos \varphi_{01,ss} = 0.84 \pm 0.42$. There are 5 figures and 1 table.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: June 30, 1962

Card 3/6

S/056/62/043/006/039/067
B125/B102

AUTHORS: Azhgirey, L. S., Kumekin, Yu. P., Meshoheryakov, M. G.,
Nurushev, S. B., Stoletov, G. D.

TITLE: The nucleon-nucleon scattering amplitudes and the complexity
of the spin-orbit potential of interaction between nucleons
and nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 6(12), 1962, 2194 -2198

TEXT: Information as to the nucleon-nucleon scattering at high energies
can be obtained from experimental data on the scattering of nucleons by
nuclei. The differential elastic cross sections of protons scattered by
carbon nuclei through small angles and the polarization of these protons
were determined by L. S. Azhgirey et al. (ZhETF, 44, 1, 1963) at
 $E_p = 660$ Mev. The real and imaginary parts of the Born amplitudes were
obtained from these cross sections $G(0)$ and $H(0)$, and the relations

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The nucleon-nucleon...

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B125/B102

$$\begin{aligned} G(\tau) &= N(k/k_0) \left[\frac{3}{4} A_1(q) + \frac{1}{4} A_0(q) \right], \\ H(q) &= -iN(k/k_0) \left[\frac{3}{4} C_1(q) + \frac{1}{4} C_0(q) \right]. \end{aligned} \quad (3)$$

between the amplitudes of nucleon-nucleus scattering and the NN-scattering amplitudes following from the superposition model lead to

$$\begin{aligned} \bar{A}^R(0) &= \frac{3}{4} A_1^R(0) + \frac{1}{4} A_0^R(0) = -0.36 \pm 0.03, \\ \bar{A}'(0) &= \frac{3}{4} A_1'(0) + \frac{1}{4} A_0'(0) = 0.72 \pm 0.04, \\ \bar{C}^R(0) &= \frac{3}{4} C_1^R(0) + \frac{1}{4} C_0^R(0) = -0.33 \pm 0.28, \\ \bar{C}'(0) &= \frac{3}{4} C_1'(0) + \frac{1}{4} C_0'(0) = 0.77 \pm 0.20. \end{aligned} \quad (4)$$

for the real and imaginary parts of the amplitudes A and C, averaged over the isotopic states. q is the momentum transferred. The subscripts 1 and zero refer respectively to the isotopic states with T = 1 and τ = 0 of the two-nucleon system considered. The negative sign of the real part $\bar{A}^R(0)$

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The nucleon-nucleon...

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of the zero-spin amplitude is due to the effect of the repulsive hard core in nucleon-nucleon interaction. In first Born approximation the spin amplitude $\bar{C}(0)$ corresponds with the spin-orbit potential of nucleon-nucleus interaction, as is shown by comparing experimentally obtained data on NN-scattering with the phase shift analysis. Between 40 and 660 Mev the energy dependence is described satisfactorily by

$$\begin{aligned}\bar{A}'(0) &= (7.20 \pm 0.20)/E_{\text{u.m.}} + (4.68 \pm 0.26) \cdot 10^{-3} E_{\text{u.m.}} \\ \bar{A}''(0) &= (0.673 \pm 0.03) - (6.88 \pm 0.35) \cdot 10^{-3} E_{\text{u.m.}} \\ \bar{C}'(0) &= (0.188 \pm 0.038) + (3.86 \pm 0.70) \cdot 10^{-3} E_{\text{u.m.}} \\ \bar{C}''(0) &= (2.45 \pm 0.42) \cdot 10^{-3} E_{\text{u.m.}} - (1.97 \pm 0.84) \cdot 10^{-3} E_{\text{u.m.}}^2\end{aligned}\quad (5).$$

The energy $E_{\text{u.m.}}$ in the c.m.s. is given in Mev and the amplitudes in 10^{-13} cm. The amplitude \bar{A}^I describes mainly the energy dependence of the total cross sections $\bar{\sigma}$ of nucleon-nucleon interaction (averaged over the isotopic spin). The energy dependence of $\bar{A}^R(0)$ leads to the relation $\sigma(0) = (k\sigma_t/4\pi)^2$ for the nucleon-nucleus scattering cross section through Card 3/4

The nucleon-nucleon...

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the angle 0° . It also implies the existence of a pure shadow scattering at ~ 400 Mev in the lab system. $U^1(0)$ is positive throughout the energy range investigated. Hence up to 660 Mev the real part of the spin-orbit potential V_{SR} of nucleon-nucleus interaction has the same sign as in the shell model. The parameters of the optical potentials, determined from the nucleon-nucleon scattering, are tabulated. The data obtained on nucleon-nucleon scattering indicate that the real part of V_{SR} diminishes with increasing energy. According to nucleon-nucleon experiments the imaginary part of V_{SR} is likely to be non-zero. There are 1 figure and 1 table.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: June 30, 1962

Table

$\frac{V}{\mu}$	V_{CR} , MeV	V_{CI} , MeV	V_{SR} , MeV	V_{SI} , MeV
40	82 ± 6	99 ± 3	5.6 ± 2.9	-1.14 ± 0.36
90	65 ± 0	57 ± 9	5.0 ± 0.9	-0.85 ± 0.56
147	52 ± 4	46 ± 3	3.8 ± 0.4	-0.85 ± 0.09
210	33 ± 4	46 ± 3	3.1 ± 0.2	-0.58 ± 0.07
310	17 ± 7	43 ± 3	2.2 ± 0.2	-0.56 ± 0.19
660	-33 ± 3	47 ± 4	1.3 ± 0.3	0.55 ± 0.48

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S/020/62/145/006/006/015
B181/B102

21 2300

AUTHORS:

Azhgirey, L. S., Kuzekin, Yu. P., Meshcheryakov, M. G.,
Corresponding Member AS USSR, Nurushev, S. B., Stoletov, G. D.,
and Huang Tieh-ch'iang

TITLE:

Excitation of C^{12} nuclei by 660-Mev protons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 6, 1962, 1249-1252

TEXT: A graphite rod, 1 cm thick, was bombarded by protons having energies of 660 ± 3.0 Mev and a flux density of about $3 \cdot 10^9$ p/cm² sec. The protons scattered through 4.2, 5.2, 7.0, 9.1 and 10.7° were deflected magnetically and then conducted through two quadrupole lenses and a collimator into an ionization chamber with three scintillation counters. The inelastic diffusion scattering cross section for 7° is $130 \cdot 10^{-27}$ cm²/sterad. The maximum energy distribution of the inelastically scattered protons is connected with the energy from the giant photoresonance of the C^{12} nuclei, but is much wider. Interaction between the incident proton and

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Excitation of C^{12} nuclei...

S/020/62/145/006/006/015
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the bound nucleons may cause stable collective excitations of the nucleus, i.e. spin, isospin, and spin-isospin waves (ZhETF, 43, no. 8, 1962). Giant photoresonance excitation and excitation of the nucleus by spin waves of the giant resonance energy may set in simultaneously. This is probably what causes the widening of the curve. There are 3 figures.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: May 11, 1962

Card 2/1

The longitudinally polarized ...

S/089/63/014/001/004/015
3102/B186

P_1 is the polarization of protons elastically scattered from carbon nuclei, μ_p is the proton magnetic moment in terms of nuclear magnetons, β is the proton velocity in c-units, and χ is the angle of deflection of the proton beam in the magnetic field. For $\chi = 90^\circ$ only the longitudinal component exists. By a suitable choice of χ , ($\chi = 30^\circ$ for proton primary energy of 660 Mev) it is possible to have the whole beam longitudinally polarized. A flux of $2 \cdot 10^6$ p/cm² sec could be attained for an energy $E_{\text{long}} = 612 \pm 9$ Mev. The angle of precession under these conditions is $\chi = 89 \pm 2.5^\circ$. The value $P_1 = 0.43 \pm 0.03$ agrees well with the data published in Zh. eksperim. i teor. fiz., 44, no. 1, 1963. There is 1 figure.

SUBMITTED: October 16, 1962

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115369

S/O56/63/044/001/034/067
B188/B180

24.6600

AUTHORS: Azhgirey, L. S., Kumekin, Yu. P., Meshcheryakov, M. O.,
Nurushev, S. B., Stoletov, G. D., Khuan De-tyan

TITLE: Elastic small angle scattering of 660-Mev-protons by carbon
nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
no. 1, 1963, 177- 191

TEXT: The differential elastic scattering cross section of 660-Mev
protons by carbon nuclei was measured in the range ($1.8^\circ \pm 0 \pm 90^\circ$) where
nuclear and Coulomb scattering interfere. The polarization of the
scattered protons was also measured, and the results were used to cal-
culate the scattering amplitudes and the corresponding nuclear potentials
of the optical model. Determination of the energy spectra of the
scattered protons shows that inelastic competes with elastic scattering
at small angles also. Reliable results on elastic scattering cross sec-
tions at high proton energies can only be obtained if inelastically
scattered protons are carefully separated. Here this is done by deflec-
tion in a magnetic field. Fig. 4 gives the differential cross section
Card 1/4

Elastic small angle scattering ...

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B188/B180

measured for elastic scattering, and Fig. 5 the polarization of scattered protons as a function of the scattering angle. Hence, the components of scattering amplitudes obtained by the method of least squares are (in

$$10^{-13} \text{ cm}): \quad g_{NR}(0) = -5.05 \pm 0.45 \quad g_{NI}(0) = 15.26 \pm 0.45$$

$$h_{NR}(0) = -10.4 \pm 13.3 \quad h_{NI}(0) = 37.6 \pm 9.3$$

The corresponding radii of the central and spin-orbital potentials are

$$\sqrt{r_g^2} = (2.48 \pm 0.04) \cdot 10^{-13} \text{ cm}, \quad (14 \text{ a})$$

$$\sqrt{r_h^2} = (2.83 \pm 0.16) \cdot 10^{-13} \text{ cm}, \quad (14 \text{ b}).$$

They are much larger than when determined from electron scattering. The values of the integrated potentials of the optical model according to the Born approximation are:

$$\text{central potential } U = ((-127 \pm 12) + i(257 \pm 14)) \cdot 10^{-28} \text{ MeV} \cdot \text{cm}^3, \quad \left\{ \begin{array}{l} 22 \text{ a} \\ 22 \text{ b} \end{array} \right.$$

$$\text{spin-orbital potential } W = ((14.8 \pm 3.9) + i(6.3 \pm 5.4)) \cdot 10^{-28} \text{ MeV} \cdot \text{cm}^3.$$

There are 5 figures and 1 table.

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Elastic small angle scattering ...

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B188/B180

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

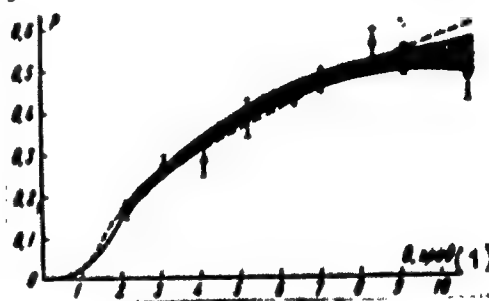
SUBMITTED: June 30, 1962

Fig. 4: Differential scattering cross section for 660 Mev protons by carbon. θ - secondary protons with more than 60 Mev; θ elastically scattered protons. Solid curve: calculated values. Legend: (1) $d\sigma/d\omega$, $10^{-24} \text{ cm}^2/\text{sterad}$, (2) θ , degrees.

Fig. 5: Polarization of protons (primary energy 660 Mev) after elastic scattering by carbon nuclei. The P value at 6.3° was taken from ZhETF, 35, 89, 1958; bold, solid curve: calculated values with optimum adaptation; hatched area: range of error. Legend: (1) θ , degrees.

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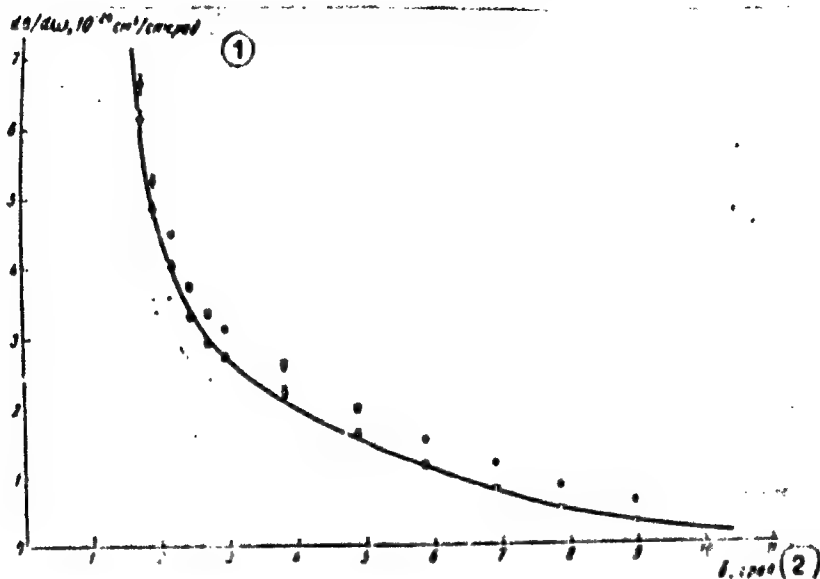
Fig. 5



Elastic small angle scattering ...

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Fig. 4



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AZHIGIREY, L.S.; KUMKIN, Yu.P.; MESHCHERYAKOV, M.G.; NURUSHEV, S.B.;
STOLETOV, G.D.

Nucleon-nucleon scattering amplitudes and the complexity of
the spin-orbital interaction between nucleons and nuclei. Zhur.
eksp.i teor.fiz. 43 no.6:2194-2198 D '62. (MIRA 16:1)

1. Ob'yedinennyy institut yadernykh issledovaniy.
(Nucleons--Scattering) (Nuclear reactions)

AZHGIREY, L.S.; KLEPIKOV, N.P.; KUMEKIN, Yu.P.; MESHCHERYAKOV, M.G.;
NURUSHEV, S.B.; STOLETOV, G.D.; SARANTSEVA, V.R., tekhn.red.

[Phenomenological analysis of pp-interaction at 657 Mev]
Fenomenologicheskii analiz pp-vzaimodeistviia pri 657 mev.
Dubna, Ob"edinennyi in-t iadernykh issledovani. Pt.1. 1963. 3 p.
(MIRA 16:6)

(Protons—Scattering)

AZHGIREY, L.S.; KUMKIN, Yu.P.; MESHCHERYAKOV, M.G.; MURUSHEV, S.B.;
STOLETOV, G.D.; KHUAN DE-TSYAN

Small-angle elastic scattering of 660 Mev. protons on
carbon nuclei. Zhur. eksp. i teor. fiz. 44 no.1:177-191 Ja '63.
(MIRA 16:5)

1. Ob'yedinyy institut yadernykh issledovaniy.
(Protons—Scattering) (Carbon)

AZHEUREY, I.S.; KLEPIKOV, N.P.; KUMAKIN, Yu.P.; MESHCHERYAKOV, M.G.;
NURUSHEV, S.B. ; STOLETOV, G.D.

Phenomenological analysis of pp-interaction at 657 Mev. Part 1.
Zhur. eksp. i teor. fiz. 45 no.4:1174-1182 0 '63. (MIRA 16:11)

ACCESSION NR: AP4018357

S/0120/64/000/001/0025/0030

AUTHOR: Biktimirov, S. Kh.; Kumekin, Yu. P.; Nurushev, S. B.;
Stoletov, G. D.

TITLE: Outfit for polarization studies with high-energy proton scattering

SOURCE: Pribery* i tekhnika eksperimenta, no. 1, 1964, 25-30

TOPIC TAGS: proton, proton study, high energy proton, proton scattering,
polarization study, triple proton scattering

ABSTRACT: An outfit (see Enclosure 1) intended primarily for measuring the triple-scattering parameters in cases where the scattering in hydrogen takes place in a horizontal plane is described. The outfit consists of two rigid trusses 4 and 5 which can rotate around a stationary vertical column 2 being supported by a common base 1. A hydrogen target 3 which serves as a second scatterer is mounted on the column 2. A number of scintillation counters forms two

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ACCESSION NR: AP4018357

telescopes which record the charged particles emitted from the hydrogen target at angles θ_1 and θ_2 in the laboratory coordinate system. The angles can be measured by means of a dial 6. Thus, the outfit can measure the parameters of triple scattering for both above angles. The segments 7 and 8, together with the target analyzers 9 and 10 and with the scintillation counters that record triple-scattered protons, form polarimeters. The segments 7 and 8 can be set either vertically or horizontally. To reduce the random-coincidence background, the protons not scattered by the third targets 9 and 10 are recorded by special scintillation counters $\Pi 3A$ and $\Pi 3A$ connected for anti-coincidence with other counters. In a typical triple-scattering experiment, the cross-section of a polarized proton beam had a circular shape with a 4-cm diameter. The members 4 and 5 were so adjusted that the protons scattered in the hydrogen to the left and to the right within a 90° angle would be recorded. Target analyzers of 8.5 g/cm were used. With a polarized-beam intensity of 2×10^7 protons/sec, the count rate of the triple-scattered protons was about 3 protons/min in each of the four channels. Correlation coincidences were counted at a rate of about 0.1

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ACCESSION NR: AP4018357

events/hr. The background in the absence of the third targets was about 16% of the total count rate; the background in the absence of the liquid hydrogen was 1% or less. "In conclusion, we wish to thank M. G. Meshcheryakov for his guidance of the work. We are also thankful to L. V. Budkin, V. L. Nikitin, V. M. Pribor, and G. V. Rykov for their help in building and adjusting the equipment." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: 23Feb63

DATE ACQ: 18Mar64

ENCL: 01

SUB CODE: PH, NS

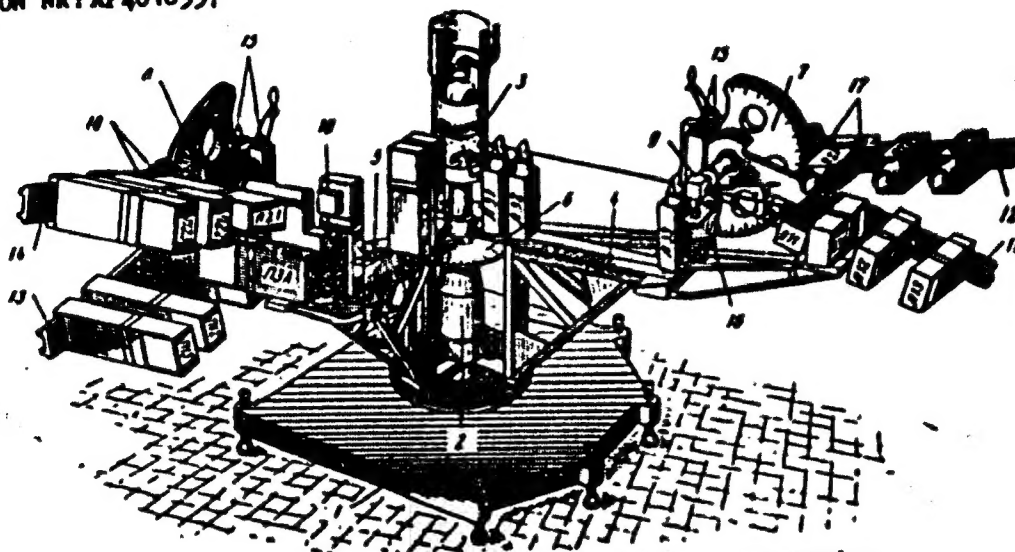
NO REF SOV: 005

OTHER: 002

Cord 3/4

ENCLOSURE: 01

ACCESSION NR: AP4018357



Outfit for polarisation studies with high-energy-proton scattering

Card 6/4

ACCESSION NR: AP4012522

S/0056/64/046/001/0050/0058

AUTHORS: Kumeikin, Yu. P.; Meshcheryakov, M. G.; Nurushev, S. B.; Stoletov, G. D.

TITLE: Triple scattering of protons at 660 MeV. IV. Angular dependence of the parameter A.

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 50-58

TOPIC TAGS: pp interaction, proton triple scattering, triple scattering parameter, angular dependence, phase shift analysis, pp scattering matrix

ABSTRACT: Continuing their investigations of pp interactions near 660 MeV (ZhETF v. 35, 1398, 1958; v. 38, 1451, 1960; v. 43, 1667, 1962), the authors describe the apparatus used in further experiments on proton triple scattering and report the measurements of the triple-scattering parameter A (characterizing the transverse po-

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ACCESSION NR: AP4012522

larization component arising upon scattering of a longitudinally polarized beam) for c.m.s. angles 54, 72, 90, 108, and 126°. The data obtained are used in conjunction with results of other experiments to reconstruct the pp scattering matrix and for comparison with the results of several phase-shift analysis variants. "The authors are grateful to L. S. Azhgirey and S. N. Sokolov for useful discussions." Orig. art. has: 4 figures, 11 formulas, and 3 tables.

ASSOCIATION: Ob'yedinenny'y institut yaderny*kh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: 10Jul63

DATE ACQ: 26Feb64

ENCL: 02

SUB CODE: PH

NO REF SOV: 020

OTHER: 008

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